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EWC CONTROLS INC.

ULTRA-TALK® 3000 PATENT PENDING

Communicating Zone Control System

Addendum sheet for UT3000
Code versions 1.17, 1.18, 1.19
APPLIES TO DAIKIN INVERTER SYSTEMS

STOP & read this bulletin before you start the system or perform repairs on the sealed system!

EWC Controls is proud to announce that the Ultra-Zone® UT3000 Zone Control has been approved to operate with the Daikin® Inverter A/C and the Daikin® Inverter Heat Pump ComfortNet™ systems!

The Daikin Inverter A/C or HP will provide variable BTU capacity based on a proportional demand from the ComfortNet CTK04 thermostat or the Ultra-Zone UT3000 zone controller.

If you are installing a Daikin inverter ComfortNet system and a ComfortNet CTK04 thermostat, along with the Ultra-Zone UT3000, the detailed start-up instructions on page 2 apply to you.

Upon power-up, the CTK04 communicating thermostat must perform a “System Test” on the Inverter system. This test is required to calibrate the Inverter system settings and parameters. Normal cooling and heating operation is not allowed until this test is complete.

The “System Test” may last 5 to 15 minutes (or longer) and must not be interrupted. In order to ensure the “System Test” is not interrupted, the test must be performed independent of the UT3000 zone control.

Follow these steps to perform a “System Test” verify “Refrigerant Charge” or “System Pump-Down”:

1. Connect a CTK04 directly to the Inverter A/C, HP and Air Handler or Furnace as shown on page 2.

2. Do not power up the UT3000 zone panel until the following task(s) are completed successfully.

3. See the Daikin Inverter Condensing Unit Installation and Service Reference for instructions on performing the “System Test” verifying the “Refrigerant Charge” or “System Pump-Down” for repairs.

4. After the system test is complete and the refrigerant charge has been verified, you may decide to access the Advanced Menu and modify other settings (Cool or Heat Trim Settings, Cooling Profile, Temperature Rise, Clear Diagnostic Faults, etc). Otherwise, proceed to Step 5.

5. After these tasks have been performed, connect the CTK04 thermostat to Zone #1, 2 or 3 of the UT3000 zone panel.

6. Power-up the UT3000 and complete the zoning installation.

New UT3000 menu items are listed on page 3 of this bulletin. Updated twinning instructions are detailed on pages 4 & 5, and an updated troubleshooting guide is provided on page 6.

You can download the UT3000 Technical Bulletin @ http://www.ewccontrols.com/acrobat/090375a0241.pdf

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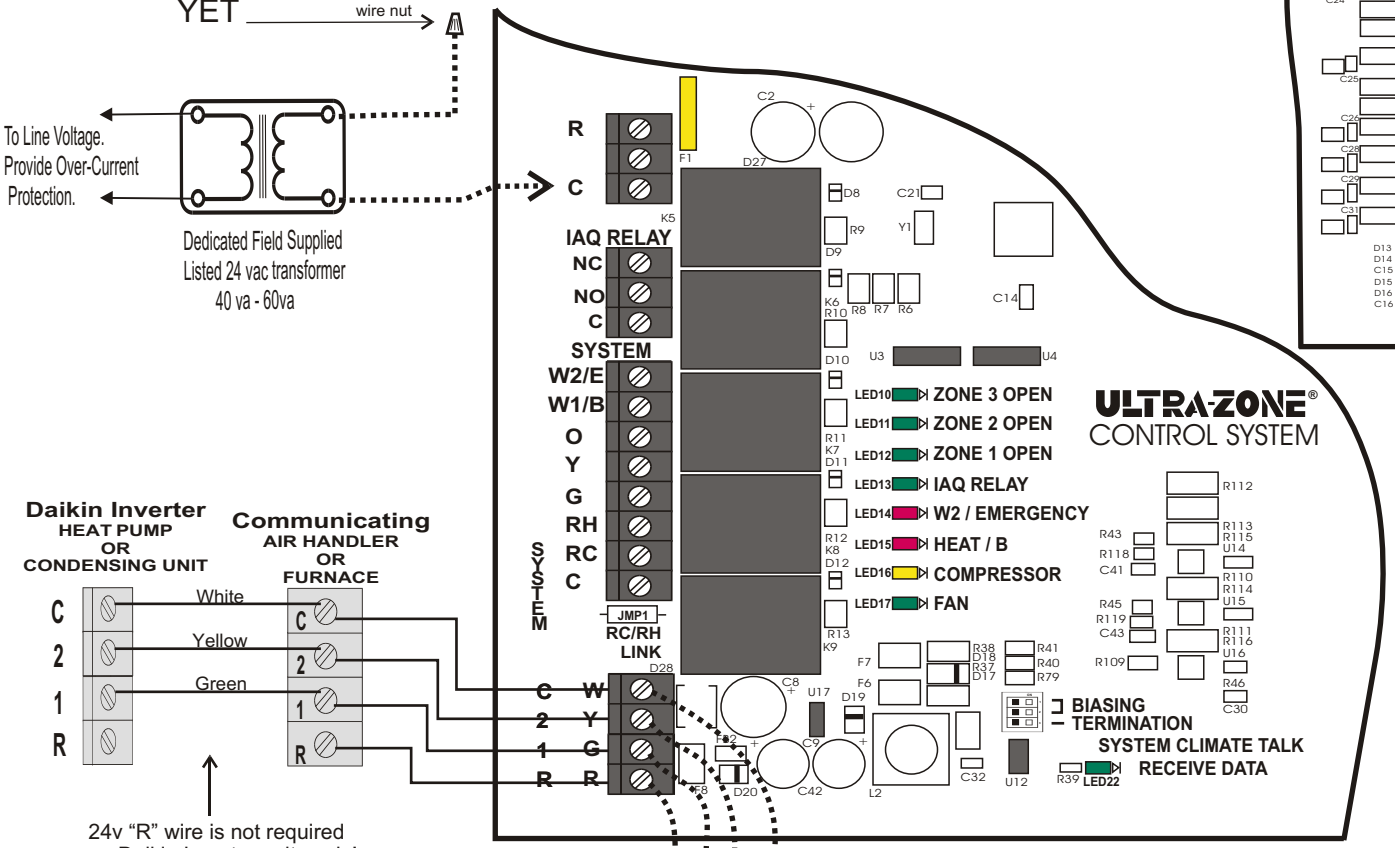
IMPORTANT START-UP INSTRUCTIONS FOR DAIKIN INVERTER ComfortNet™ CONDENSING UNITS & HEAT PUMPS ONLY!

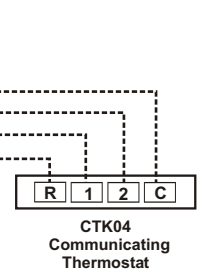
DO NOT POWER-UP YET

wire nut

To Line Voltage. Provide Over-Current Protection.

Dedicated Field Supplied Listed 24 vac transformer 40 va - 60va





Remove & connect the CTK04 thermostat directly to the HVAC system as shown below.

*Perform the **Initial System Test, Verify Refrigerant Charge or Pump the system down for repairs!***

When you're done, re-connect the CTK04 back to the Zone 1 T-stat terminal block!

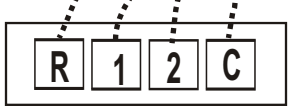
Daikin Inverter HEAT PUMP OR CONDENSING UNIT

Communicating AIR HANDLER OR FURNACE

24v "R" wire is not required on Daikin Inverter units only!

Connect 24v "Commons" together, to insure proper data line communication.

Temporary wire cable



CTK04 Communicating Thermostat

1. Connect the CTK04 thermostat directly to the HVAC system, as shown.
2. Power up the HVAC system. ***DO NOT*** *power the UT3000.*
3. Allow the CTK04 to ***find*** the HVAC system.
4. Perform the Initial ***SYSTEM TEST*** via the CTK04. *(Refer to Daikin Installation)*
5. Perform the Refrigerant ***CHARGE MODE*** via the CTK04. *(Refer to Daikin Installation)*
6. Perform a ***SYSTEM PUMP-DOWN*** to repair/replace components on the sealed system.
7. If desired, modify any other Advanced Menu items *(Trim Settings, Cooling Profile, Heat Setup, etc).*

** ***After these tasks are completed:***

8. Disconnect the CTK04 from the HVAC System.
9. Connect the CTK04 to the Zone 1 Block.
10. Power up the UT3000 Zone Controller.
11. Allow the UT3000 to ***find*** the HVAC system.
12. Finish the Installation & Operate the Inverter in zoned mode.
13. Call EWC Technical Support if you have any trouble.

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NEW MENU ITEMS and UPDATES

1. Legacy Demand feature allows the Installer to select the weight value of 24v non-communicating zones.
2. Total Zones feature allows the Installer to select the exact number of zones, which changes the PID quotient value and optimizes staging performance.
3. Limit SAS PID imposes a limit to the PID loop highest attainable value, at the sum of the calculated 24v non-communicating thermostat values.
4. Default Dampers CLOSED or OPEN after the purge cycle, (during idle periods).
5. UT3000 Code Version is now displayed in the menu without having to cycle the power supply.
6. Updated Twinning directions on page 4 and 5.
7. Updated Troubleshooting guide on page 6.

Download the latest version of the UT3000 Technical Bulletin @ http://www.ewccontrols.com/acrobat/090375a0241.pdf

FEATURE	DEFAULT	RANGE TO SELECT
System Type	Heat/Cool	Heat Pump or Heat/Cool
HP Type	NON Dual Fuel	Dual Fuel or Non-Dual Fuel
T-Stat Type	Heat/Cool	Heat Pump or Heat/Cool
Rev Valve	RV 'O'	'O' Type RV or 'B' Type RV
Fan Mode	Gas	GAS or HYDRO (Electric)
OAS SP	20° F	OFF or 7° to 42° F
O.T. Offset	15° F	5° to 20° F
U.T. Offset	8° F	5° to 10° F
SAS HP TGT	100° F	90° to 120° F
SAS Gas TGT	130° F	120° to 170° F
SAS Cool TGT	50° F	42° to 60° F
SAS RSP DLY	30s	10seconds - 180seconds
W2 Threshold	80%	65% - 100% (Adj. in 5 point increments)
PURGE FAN	25%	25% - 100% (Adj. in 25 point increments)
Legacy DMD	50%	25%, 50%, 75% or 100%
Total Zones	3	2 or 3 zones per panel
Limit SAS PID	N	*Yes* or *No*
DMP DFLT	Open	Open or Close

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UT3000 PANEL TWINNING PROCEDURE

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TECHNICAL BULLETIN
ULTRA-TALK® 3000 PATENT PENDING

Refer to the Graphic on Page 5

1. Mount Panel "A" and Panel "B" in close proximity to the HVAC system and each other.

2. Install a dedicated 24v 60va listed transformer and run 24v power to both UT3000's. DO NOT use separate transformers! ** Do not power up yet.*

3. Connect the communicating HVAC system to the Panel "A" communicating SYSTEM block.

4. Connect communicating and/or legacy 24v thermostats to Panel "A" as desired.

5. Connect legacy 24v thermostats to Panel "B". Communicating thermostats will work on Panel "B" but they cannot digitally access the communicating HVAC system. If these functions are not important, then you may use communicating thermostats on Panel "B".

6. Connect the twinning wire connections between the Dry SYSTEM output block of Panel "B" to the legacy 24v Zone 1 T-stat input of Panel "A". Cross-wire to match the Heat/Cool application or the Heat Pump application. See graphics on Page 5.

7. Install one Supply Air Sensor and connect the wires to the SAS terminals of Panel "A".

8. Install the other Supply Air Sensor and connect the wires to the SAS terminals of Panel "B".

9. Now, Power Up the communicating HVAC system and power up the UT3000's.

10. Panel "A" will automatically configure and talk to the communicating HVAC system.

11. Communicating thermostats connected to Panel "A" will also configure automatically.

12. If using 24v legacy T-stats, program Panel "A" for the type of 24v thermostats being used.
* The UT3000 defaults to Heat/Cool type 24v T-stats. Change to Heat Pump type if necessary.

13. Program Panel "B" to match the HVAC system type shown in the Menu screen on Panel "A".

14. Program the Panel "B" feature "DMP DFLT" to the CLOSE position.

15. Program Panel "B" to match the same 24v legacy T-stat type programmed into Panel "A".

16. Program the Panel "B" feature "OAS SP" and select the OFF position.

17. Program the Panel "A" feature "Legacy DMD" to 100% to ensure Panel "B" demands carry the maximum demand weight.

18. Set all thermostats to operational mode and operate the HVAC system in both Heating and Cooling modes, to confirm proper operation. ***Call EWC Controls Engineering Dept. if you have questions.***

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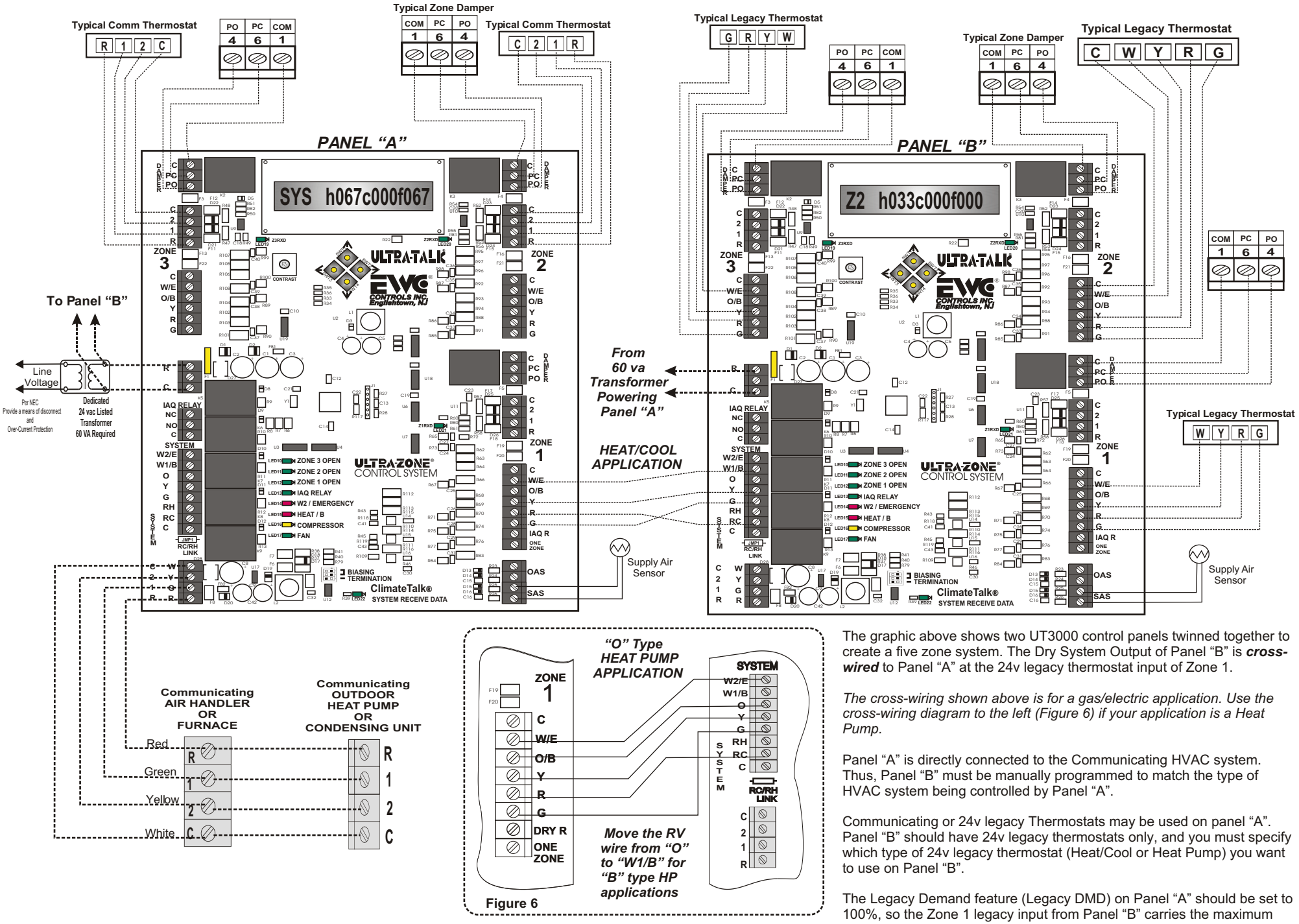

Figure 6

The graphic above shows two UT3000 control panels twinned together to create a five zone system. The Dry System Output of Panel "B" is ***cross-wired*** to Panel "A" at the 24v legacy thermostat input of Zone 1.

The cross-wiring shown above is for a gas/electric application. Use the cross-wiring diagram to the left (Figure 6) if your application is a Heat Pump.

Panel "A" is directly connected to the Communicating HVAC system. Thus, Panel "B" must be manually programmed to match the type of HVAC system being controlled by Panel "A".

Communicating or 24v legacy Thermostats may be used on panel "A". Panel "B" should have 24v legacy thermostats only, and you must specify which type of 24v legacy thermostat (Heat/Cool or Heat Pump) you want to use on Panel "B".

The Legacy Demand feature (Legacy DMD) on Panel "A" should be set to 100%, so the Zone 1 legacy input from Panel "B" carries the maximum demand weight. ***Refer to the detailed twinning instructions on page 4.***

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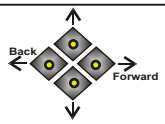
T R O U B L E S H O O T I N G

SYMPTOM	SOLUTIONS
LCD & LED's are responding properly but HVAC system is malfunctioning. Communicating T-stat displays fault messages.	Check HVAC system field wiring for proper connections, continuity & shorts. Some HVAC systems require a *"System Test"* prior to normal operation. Connect communicating T-stat directly to HVAC system & perform System Test. Check DATA voltages: **C to Data 1 =2.8, C to Data 2 =2.2 *or* C to Data 1 =1.9vdc. C to Data 2 =1.3vdc.**
Data voltages are incorrect. LCD & LED's are responding properly and/or Zone Thermostats are malfunctioning.	Check two BIAS switch settings on the UT3000 panel. Try turning them off. 24v Commons must be phased when using separate transformers on outdoor and indoor units. Check Zone thermostats for proper connections. Test wires for Continuity/Shorts. Access the HVAC system Advanced Menu and clear any Diagnostic Faults.
LCD & LED's function and HVAC system functions normally but dampers do not respond.	Check damper motor wiring for proper connections. Check damper motor 24volt & 500mA Breaker. Test wires for Continuity/Shorts. Check damper motor wiring for shorts/miswiring. Test wires for Continuity/Shorts. Refer to Page 12 for Damper Wiring.
LCD & LED's do not function and HVAC system does not respond.	Check HVAC & UT3000 system transformer supply voltage. Check HVAC & UT3000 system 24vac transformer voltage/fuse/breakers. Test all wires for Continuity, shorts to 24v Common or shorts to earth ground. Check HVAC & UT3000 system wiring for shorts and miswiring.
Time Delay is Active and won't allow Heat or Cool to Function. 	When Troubleshooting, Simultaneously Press the Back & Forward buttons for 1 second to Bypass any Active Time Delay.

CHECK YOUR WIRING

DETECTING 24vac SHORTS	SYMPTOM: Entire Panel or a Single Zone appears to be dead!
HVAC system not responding and UT3000 LED's are off.	If 24vac short has occurred, 24vac will be present at the UT*3000 24v Input terminals R & C;* but 24vac will not be present at any *Thermostat R&C.*
Dampers not responding and The UT3000 LED's are off.	**SOLUTIONS:** Remove 24vac power from UT3000 and allow F1 circuit breaker to cool! Find and repair short(s) in damper and/or thermostat field wiring. Restore 24 vac power.
ISOLATING 24vac SHORTS *140mA & 500mA circuit breakers protect the UT3000 and react to a short in the Thermostat/Damper component field wiring.*	Disconnect the wire(s) from the 'R' *terminals on the UT3000 thermostat terminal blocks ,* and the *"C/PO/PC" terminals* on the UT3000 damper motor terminal blocks. Restore power. If the short is no longer present, Ohm out the thermostat and damper field wiring for continuity, shorts to common and/or shorts to earth ground. Replace or repair wires as necessary. Restore power.

Detecting 24v shorts to common or shorts to earth ground

When the 2.5A breaker is tripped it will get hot to the touch and none of the panel LED's will illuminate. The LCD will also cease to function. To reset the breaker, locate the short by removing each hot wire connected to the panel, one at a time. When the shorted wire is removed, the panel will resume normal functions. Now you must repair or replace the shorted wire. If one or more 140mA or 500mA breakers trip, only the device(s) connected to that block will be affected. Remove each hot wire connected to that block until the voltage is restored. Find and repair the short before re-connecting the wires. If there is a short between the Data 1 & 2 wires or if the Data wires are shorted to 24v or earth ground, the Communicating thermostat on that zone will alert you by displaying "Call for Service". If no communicating thermostat is connected and a short occurs on the 24v wires, that zone will not function. Find and repair the short using the methods described above.

TECHNICAL SUPPORT

EWC® Controls provides superior toll free Troubleshooting Support for the UT3000 when you are on the job site!

Call 1-800-446-3110 Monday - Friday 8am to 5pm EST. Otherwise call 1-732-446-3110 for information on the UT3000 and other ULTRA-ZONE® products. Visit our web site to download this Technical Bulletin and other related information at ***www.ewccontrols.com***

When calling for Technical Support from the job-site, please have a true RMS multi-meter, pocket screwdriver, and wire cutters/strippers on hand.

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JOB NOTES

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JOB NOTES

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